Usefulness of Barium Small Bowel Follow Through as an Investigative Tool in Unexplained Iron Deficiency Anemia.

Edwin Uzu, D.O.
Brookhaven Memorial Hospital Medical Center, Patchogue, New York.

**BACKGROUND & AIMS**

Iron Deficiency Anemia is one of the most commonly encountered pathologies in patients care and often involves gastroenterology as well as radiology consults. Iron deficiency anemia affects approximately 35% of the world’s population. A substantial volume of the consultations requested by gastroenterologists are directed towards the evaluation of anemia. Since iron deficiency anemia often arises from gastrointestinal lesions, such as inflammatory bowel diseases (Crohn’s and ulcerative colitis,) bleeding ulcers, celiac disease, as well as several malignant diseases. In view of this, establishment of a firm diagnosis usually results in an endoscopic evaluation. However, in many instances such as in this study, detection of these pathologies is very low. On the other hand, barium studies are time consuming procedures with very little financial compensation and has issues of radiation exposure. In many hospitals, more advanced imaging techniques such as CT colonoscopy, MRI, ultrasound and capsule endoscopy are available for evaluation of these aforementioned diseases.

Although, the power of this study is low at 100 patients, a diagnostic percentage of 5% pathology detection should be viewed as low as an efficient diagnostic tool for investigating unexplained iron deficiency anemia.

**METHODS**

A twelve-month retrospective study involving a review of 100 patients records who were referred to the Radiology department at Brookhaven Memorial Hospital Medical Center and who had clinical and laboratory confirmed diagnosis of unexplained Iron Deficiency Anemia and who has had negative Endoscopy with Biopsies.

**Procedure:**

The patient drinks a contrast medium containing barium sulfate. This contrast medium appears white on x-rays, and delineates the outline of the internal lining of the bowel. Under direct fluoroscopy, images are taken as the contrast moves through the intestine, commonly at 0 minutes, 15 minutes, 30 minutes, 45 minutes and 90 minutes. This enables the radiologist to assess the bowel as it becomes visible. The test is completed when the Barium is visualized in the terminal ileum and cecum, which marks the beginning of the large bowel. This is one of the most common places for pathology of the bowel to be found, therefore imaging of this structure is crucial. The test length varies from patient to patient as bowel motility is highly variable. The test length can go up to 5 hours.

**RESULTS**

Of one hundred patients records reviewed, only three patients were identified with a cause of anemia after barium small bowel follow through studies.

<table>
<thead>
<tr>
<th>Study Findings</th>
<th>(n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyps/Masses</td>
<td>2 (2%)</td>
</tr>
<tr>
<td>Crohn’s Disease</td>
<td>3 (3%)</td>
</tr>
<tr>
<td>Ulcers</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Angiodysplasia</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Normal Study</td>
<td>95 (95%)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

A dedicated small bowel follow-through is a good imaging test for pathologies like Crohn’s disease, detecting polyps, masses, and malabsorption. However, in many instances such as in this study, detection of these pathologies is very low. On the other hand, barium studies are time consuming procedures with very little financial compensation and has issues of radiation exposure. In many hospitals, more advanced imaging techniques such as CT colonoscopy, MRI, ultrasound and capsule endoscopy are available for evaluation of these aforementioned diseases.

**References:**

1. Marc S. Levine et al. Practical fluoroscopy of GI and gastro urinary tracts. Department of Radiology, University of Pennsylvania.

